

## Claims for CHEMICAL CHANGE AGENT

1. A chemical change agent for use as an additive to combustible materials to facilitate complete combustion of a solid fuel, said agent consisting essentially of the following:

Slack Wax	0 – 60%
Fatty Acid	.5% - 10%
Ammonia	.2% - 2%
Ammonia like compounds ( Amide, Amines, Amino Acid and other chemical compounds containing at least one NH <sub>2</sub> function group )	
Water	42% - 90%

2. A synfuel composition for use as a combustible fuel additive to enhance complete combustion and to reduce NO<sub>x</sub> in combustion gases.

Slack Wax	11%
Stearic Acid	3.5%
Amide	20%
Ammonia	.5%
Water	65%

3. A chemical composition for use on coal, wood, waste tires and other solid fuels where solid fuels are treated with chemical composition so as to reduce formation of NO<sub>x</sub> in combination gases.

Slack Wax	0 – 60%
Fatty Acid	.5% - 10%
Ammonia	.2% - 2%
Ammonia like compounds ( Amide, Amines, Amino Acid and other chemical compounds containing at least one NH <sub>2</sub> , functional group	0 – 60%
Water	42% - 90%

4. A chemical composition for use as a combustible fuel additive, said composition consisting essentially of

Slack Wax	11%
Fatty Acid	3.5%
Amide	20%
Ammonia	.5%
Water	65%

5. A chemical composition as in claim 4 wherein said fatty acid is a stearic acid.

6. A chemical composition as in claim 4 wherein said amide is urea.

7. A chemical change agent for use as a coal treatment to enhance complete combustion and to reduce NO<sub>x</sub> in combustion gases, said composition consisting essentially of

Hydrocarbon wax	0 – 60%
Fatty acid	0 – 10%
Ammonia	0 – 2%
Ammonia like compounds	0 – 60%
Water	30 – 60%

8. A chemical change reagent for use as a coal treatment, said reagent consisting essentially of

Hydrocarbon wax	11%
Fatty Acid	3.5%
Ammonia	.5%
Amide	20%
Water	65%

9. A chemical change reagent as in claim 8 wherein said amide is urea.

10. A chemical change reagent for use on coal, wood, and waste tires to treat said substances so as to reduce NOx in combustion gases, said reagent consisting essentially of

Hydrocarbon wax	0 – 60%
Fatty acid	0 – 10%
Ammonia	0 - 2%
Ammonia like compounds	0 – 60%
Water	30 – 90%

11. A chemical change agent for use on wood, coal and waste tires to treat said substances so as to reduce NOx in combustion gases, said agent consisting essentially of

Hydrocarbon wax	11%
Fatty acid	3.5%
Ammonia	.5%
Amide	20%
Water	65%

12. A chemical change agent as in claim 11 wherein said amide is urea.
13. A reagent as in claim 7 and including a percentage of a wetting agent.
14. A reagent as in claim 13 wherein said wetting agent is used in 0.5% concentrations.
15. A reagent as in claim 7 and including 0 – 10% of Titanium Dioxide.
16. A reagent as in claim 8 and including 0 – 10% Titanium Dioxide.
17. A reagent as in claim 10 and including 0 – 10% Titanium Dioxide.
18. A reagent as in claim 11 and including 0 – 10% Titanium Dioxide.
19. A chemical composition to be added to another chemical change agent that is compatible with coal and other fuels to promote reduction of NOx in the resultant combustion gases, said composition consisting essentially of

Ammonia	0 – 2%
Water	30 – 95%
Ammonia like compounds	0 – 60%
Amides, Amines, Amino acid and other chemical compounds which contain at least one NH,	

NH <sub>2</sub> or NH <sub>3</sub> functional group	
Titanium Dioxide	0 – 10%

20. A composition for adding to coal prior to combustion for lowering the NOx emissions, said composition consisting essentially of

Ammonia	0 – 2%
Wetting Agent	0 – 5%
Water	30 – 95%
Ammonia like compounds	
Amides, Amines, Amino acid	
And other chemical compounds	
Which contain at least one NH, NH <sub>2</sub> or NH <sub>3</sub> functional group	
Titanium Dioxide	0 – 10%

21. A chemical composition as in claim 20 having the ingredients in claim 20 comprising 1 to 20 parts and 1 - 6 parts of the following

Hydrocarbon wax	0 – 60%
Fatty Acid	0 – 10%
Ammonia	0 – 2%
Water	30 – 90%

22. A method of reducing NOx emissions in the burning of coal, said method comprising

adding a NOx reducing agent to said coal prior to burning  
grinding said coal and chemical change agent together to provide for  
uniform distribution of said agent in said coal

23. A method as in claim 22 which includes adding a wetting agent to said coal and agent mixture.

24. A method as in claim 22 wherein said NOx reducing agent includes Titanium Dioxide.

25. A method as in claim 22 wherein said coal/agent mixture is ground finely into a dust to promote even distribution.

26. A method as in claim 22 wherein said NOx reducing agent is a composition consisting essentially of

Hydrocarbon wax	0 – 60%
Fatty acid	0 – 10%
Ammonia	0 – 2%
Ammonia like compounds	0 – 60%
Water	30 – 90%

27. A method as in claim 22 wherein said NOx reducing agent includes an agent selected from the group consisting of

Aluminum Silicate
Vanadium Oxide
Tungsten Oxide
Titanium Dioxide
Iron Oxide as well as reacted Metals
Iron Compounds
Iron containing Compounds
or a combination of the foregoing.

28. A method of reducing NOx in combustible emissions, said method comprising  
providing a source of combustible material,  
adding a NOx reduction reagent into said material prior to burning, said  
adding involving distributing said reagent uniformly throughout the  
combustible material to provide a combustible mixture,  
burning said mixture so as to provide a reduction in NOx from that produced  
if said combustible material was burned by itself.

29. A method as in claim 28 wherein said material is coal.

30. A method as in claim 29 wherein said material is bituminous coal.

31. A method as in claim 28 wherein said NOx reduction agent consists essentially  
of the following:

Hydrocarbon wax	0 – 60%
Fatty acid	0 – 10%
Ammonia	0 – 2%
Ammonia like compounds	0 – 60%
Water	30 – 90%

32. A method as in claim 28 wherein said NOx reduction reagent consists  
essentially of the following:

Hydrocarbon wax	11%
Fatty acid	3.5%

Ammonia	.5%
Amide	20%
Water	65%

33. A method as in claims 4 and 32 wherein said amide is urea.

34. A method as in claim 32 wherein said fatty acid is stearic acid.

35. A method as in claims 4 and 32 wherein said reagent includes Titanium Dioxide.

36. A method as in claim 28 wherein said mixing step includes grinding said material to dust as the reagent is added thereto.

37. A method as in claim 36 wherein said material is coal.

38. A method as in claim 28 and including the step of adding a wetting agent to said material prior to addition of said chemical change reagent.

39. A method as in claim 38 wherein said chemical change reagent consists essentially of the following:

Ammonia	0 – 2%
Wetting agent	0 – 5%
Water	30 – 95%
Ammonia like compounds	
Amides, Amines, Amino acid and other chemical compounds which contain at least one NH,	

NH <sub>2</sub> , or NH <sub>3</sub> functional group	
Titanium Dioxide	0 – 10%

40. A method as in claim 39 wherein the reagent has the ingredients comprising 1 in 20 parts and 1 to 6 parts of the following:

Hydrocarbon wax	0 – 60%
Fatty Acid	0 – 10%
Ammonia	0 – 2%
Water	30 – 90%

41. A synfuel meeting the requirements of Section 29 of the Internal Revenue Code definition of a “synfuel”, said synfuel consisting essentially of

coal which has been treated with and which has chemically reacted with a chemical change agent composition consisting essentially of

Slack wax	11%
Fatty Acid	3.5%
Amide	20%
Ammonia	.5%
Water	65%

42. A synfuel as in claim 41 wherein said Fatty Acid is stearic acid.

43. A synfuel as in claim 41 wherein said Amide is urea.

44. A synfuel as in claim 41 wherein said composition also includes a NOx reducing agent for aiding in reducing NOx emissions when said coal is burned.

45. A synfuel as in claim 44 wherein said NOx reducing agent is selected from the group consisting of

- Aluminum Silicate
- Vanadium Oxide
- Tungsten Oxide
- Titanium Dioxide
- Iron Oxide as well as reacted Metals
- Iron compounds
- Iron containing compounds
- Or a combination of the foregoing